Total No. of printed pages = 6

END SEMESTER (REGULAR/RETEST) EXAMINATION May/June – 2026

Semester : 6th (Old)

Branch : Civil Engineering

Subject Code : CV-603

Subject Name : ENVIRONMENTAL ENGINEERING AND POLLUTION CONTROL

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

Instructions :

(i) Question Nos. 1, 2, 3 and 9 are compulsory.

(ii) Answer any *four* questions from the rest.

1. Fill in the blanks : 1×5=5

(a) The Plastic Waste Management Rules, _____ regulate the use, manufacture, and disposal of plastic to reduce plastic pollution.

(b) The quantity of water required for a person for drinking purpose is _____ liters per day.

[Turn over

(c) Garbage consists of _____.

(d) Generally, the break point lies between 3 to _____ ppm of chlorine.

(e) Septic Tank work on the principle of _____.

2. State whether the following statements are True or False : 1×5=5

(a) Zeolite process is suitable for iron and manganese removal.

(b) The aim of disinfection is to kill all the micro-organisms in water.

(c) A trickling filter consists of four parts. Three parts are a tank, a filter medium and a distribution system. The fourth part is under drain.

(d) The settle particles of sewage is known as sludge.

(e) According to the WHO guidelines, the acceptable limit of arsenic in drinking water is 10 ppb.

3. Choose the correct answers : $1 \times 5 = 5$

(a) Which of the following is a greenhouse gas ?

(i) N_2 (ii) CO_2

(iii) He (iv) Ar

(b) Skimming or screening cannot remove

(i) large suspended matter

(ii) oil and fat

(iii) grease

(iv) fine suspended matter

(c) B.O.D. are usually made at

(i) 0°C –1 day (ii) 10°C – 2 days

(iii) 20°C – 5 days (iv) 20°C – 3 days

(d) Per capita water demand is calculated in liters

(i) per person per day

(ii) per person per month

(iii) fire and public-use demand

(iv) None of the above

(e) Manhole covers are usually made of

(i) cement (ii) wood

(iii) cast iron (iv) steel.

4. (a) What is meant by per capita demand. Discuss the variation of water demand. 2+3=5

(b) The population of a city in first three continuous years is given as 40000, 60000 and 80000 respectively. What is the population of the city in the fourth continuous year according to the arithmetic increase method and geometrical increase method ? 2+2=4

(c) What is Break-point chlorination ? Explain. 3

5. (a) Explain Sewage treatment plant with the help of a neat flow diagram. 5

(b) Explain "Activated sludge and sludge digestion". 4

(c) What is sludge ? What are the methods of disposal of sludge. 1+2=3

6. (a) Draw a neat sketch of a rapid gravity sand filter and compare its working principles with that of a slow sand filter. 5

(b) Explain the different systems of water supply and discuss the advantages and disadvantages of each system. 5

(c) What is the necessity and importance of environmental sanitation ? 2

7. (a) What is disinfection of water ? 2

(b) Explain briefly the effects of water pollution. Also give remedial measures to control fresh water pollution. 4

(c) Explain in brief the various types of pipes used in a water supply system and describe briefly their relative advantages and disadvantages. 6

8. (a) Define the term 'Septic'. 2

(b) Describe the causes, effects, and control measures of global warming. 3

(c) Describe the characteristics of dairy industry waste water and discuss the suitable treatment methods for its effective management. 4

(d) Describe the standard of quality of treated water. 3

9. Write short notes on any *two* : 3.5×2=7

(a) Causes of pollution

(b) Hazardous waste

(c) Ozone hole

(d) Bore Hole Latrine.